Request to Archive
With The National Centers for Environmental Information
For 1/16 degree, Gridded Daily North American Hydrometeorological Dataset
Provided by University of Colorado, LASP

2015-04-07

This information will be used by NCEI to conduct an appraisal and make a decision on the request.

1. Who is the primary point of contact for this request?

Ben Livneh
University of Colorado, LASP
Research Faculty
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ben.livneh@colorado.edu
email is preferred

2. Name the organization or group responsible for creating the dataset.

Ben Livneh, University of Colorado

3. Provide an overview summarizing the scope of data you want to archive. Describe the outputs, data variables, including their measurement resolution and coverage.

This data set includes observed daily precipitation and maximum and minimum temperature, gridded to a 1/16° (~6km) resolution spanning the entire country of Mexico, the conterminous U.S. (CONUS), and regions of Canada south of 53º N for the period 1950-2013. The dataset improves previous products in spatial extent, orographic precipitation adjustment over Mexico and parts of Canada, and reduction of transboundary discontinuities. Additionally, hydrologic simulations from the Variable Infiltration Capacity (VIC) model are included, for daily fluxes and states.

4. What is the time period covered by the dataset? (YYYY-MM-DD, YYYY-MM or YYYY)

From 1950-01-01 to 2013-12-31

5. Edition or version number(s) of the dataset:

Oct2014

6. Approximate date when the dataset was or will be released to the public:

2015-02-01

7. Who are the expected users of the archived data? How will the archived data be used?

This product is suitable for estimating large-scale hydrometeorologic phenomena, for use in climate downscaling studies, and to drive land surface models.

8. Has the dataset undergone user evaluation and/or an independent review process? Did NCEI participate in design reviews?

No

9. Describe the dataset's relationship to other archived datasets, such as earlier versions or related source data. If this is a new version, how does it improve upon the previous version(s)?

This data set is related to the Livneh et al., (2013, J. Clim) data set. It follows the same methodology, however, the domain was greatly expanded from the conterminous U.S. to include the entire country of Mexico and southern Canada. The temporal domain extends later (2013 versus 2011) and the climatological reference period for orographic scaling is more recent (1981-2010 versus 1961-1990).

10. List the input datasets and ancillary information used to produce the data.

Daily Canadian precipitation, maximum and minimum temperature station data were obtained from Environment Canada, and CONUS data from the National Climatic Data Center (NCDC). For Mexico data were provided by the Servicio Meteorológico Nacional (SMN), under the Comisión Nacional del Agua (CONAGUA), for the period 1950-2013. However, since 2000, a sharp decline in Mexican station density was noted in several states, particularly after 2006. To fill gaps for the period 2000-2013, we contacted CONAGUAs regional offices in the states of Chihuahua, Sonora, Coahuila, Durango, Nayarit Puebla, and Yucatan. Additionally, 86 precipitation stations distributed across the Sierra Madre Occidental (Gochis et al., 2003) were incorporated, which provide an important sampling of high elevation precipitation absent from the above station sources.

11. List web pages and other links that provide information on the data.

ftp://gdo-dcp.ucllnl.org/pub/dcp/archive/OBS/livneh2014.1_16deg/

12. List the kinds of documents, metadata and code that are available for archiving. For example, data format specifications, user guides, algorithm documentation, metadata compliant with a standard such as ISO 19115, source code, platform/instrument metadata, data/process flow diagrams, etc.

1. C++ source code used in the gridding procedure will be made available for archiving

13. Indicate the data file format(s).

1. netCDF-3

14. Are the data files compressed?

bzip2

15. Provide details on how the files are named and how they are organized (e.g., file_name_pattern_YYYYMM.tar in monthly aggregations).

The daily data are packaged in monthly files with the following format:
Meteorology: Livneh_NAmerExt_15Oct2014.YYYYMM.nc.bz2
Hydrologic outputs: Fluxes_Livneh_NAmerExt_15Oct2014.196407.nc

16. Explain how to access sample data files and/or a file listing for previewing. If it is not available now, when will it be available?

Any of the common netCDF utilities will work, e.g. ncview

17. What is the total data volume to be submitted?

Historic Data: all historic data or data submitted as a completed collection.

Total Data Volume: 400GB
Number of Data Files: 770

18. Are later updates, revisions or replacement files anticipated? If so, explain the conditions for submitting these additional data to the archive.

No additional updates, revisions or replacement data are anticipated.

19. Describe the server that will connect to the ingest server at NCEI for submitting the data.

Physical Location:	7000 East Ave., Livermore, CA 94550-9234
System Name:	Lawrence Livermore National Laboratory
System Owner:	Lawrence Livermore National Laboratory
Additional Information:	ftp://gdo-dcp.ucllnl.org/pub/dcp/archive/OBS/livneh2014.1_16deg/netcdf/daily/

20. What are the possible methods for submitting the data to NCEI? Select all that apply.

1. FTP PULL
2. FTP PUSH

I'm not totally sure about the extents

21. Identify how you would like NCEI to distribute the data. Web access support depends on the resources available for the dataset.

1. User interface to order and stage data for download
2. Direct download links

22. Will there be any distribution, usage, or other restrictions that apply to the data in the archive?

No known constraints apply to the data.

23. Discuss the rationale for archiving the dataset and the anticipated benefits. Mention any risks associated with not archiving the dataset at NCEI.

This data set has already received wide interest from the climate and hydrology communities. Therefore, it is essential that it is hosted in a visible, public location that has a commitment to serve the data for years to come. I am preparing to submit a manuscript that describes the data to Nature Scientific Data that will point to this location.

24. Are the data archived at another facility or are there plans to do so? Please explain.

I partnered with the U.S. Bureau of Reclamation to develop these data and they are stored presently on their server at LLNL. However, the longevity of that data hosting is unclear, hence the desire to move the data to a more centralized, comprehensive location, NCDC.

25. Is there an existing agreement or requirement driving this request to archive? Have you already contacted someone at NCEI?

No

26. Do you have a data management plan for your data?

No

27. Have funds been allocated to archive the data at NCEI?

No

28. Identify the affiliated research project, its sponsor, and any project/grant ID as applicable.

Funding for the development of the data were obtained from the United States Bureau of Reclamation (BOR: R11AC81334): Water and Climate Change Research, including Technical Support of Reclamation

29. Is there a desired deadline for NCEI to archive and provide access to the data?

No deadlines for archive or access.

30. Add any other pertinent information for this request.

I sincerely appreciate the efforts of NCDC.

To clarify, my affiliation is the University of Colorado, Cooperative Institute for Research in Environmental Sciences, i.e. a NOAA cooperative institute.